

REMARKS

Claim 31 has been amended and claims 38-46 have been canceled. Claims 31-37 are currently pending in the application.

Claim 31 has been amended to cover a specific embodiment of the invention generally described on page 12, lines 3-11, of the specification. This embodiment encompasses the use of electric field waves propagating along a trench to separate different charged particles, wherein the speed at which the waves propagate along the trench is determined by the resolution of separation as determined by an optical detection device disposed along the trench.

More specifically, bases for terms in the new claims are as follows:

Claim(s)	Term/Phrase	Basis
31	"separating different charged particles"	Page 10, lines 18-19.
31	"sequentially activate electrodes to provide electrical field waves"	Page 10, lines 14-18.
31	"speed" in reference to electrical field waves.	Page 10, line 18; page 11, lines 15-23.
31	"optical detection device being interactive with the electronic computer so that the speed of the electrical field waves can be adjusted based on charged particles detected by the optical detection device"	Page 12, lines 3-12.

No new matter has been added by the amendments. Reconsideration is respectfully requested.

Rejections under 35 U.S.C. 112

In par. 2 of the Office Action, the Examiner rejected claims 31-46 under 35 U.S.C. 112 first paragraph for containing subject matter not appropriately described in the specification. In particular, the Examiner averred that the step of "applying a voltage" in claims 31 and 39 are not appropriately described.

Applicants submit that the grounds for this rejection have been removed by amendment of the claims. Accordingly, Applicants respectfully request that the rejection be withdrawn.

In par. 4 of the Office Action, the Examiner rejected claims 31-46 under 35 U.S.C. 112 second paragraph for the lack of antecedent basis for "each terminus," and several ambiguities regarding step of "applying a voltage" in claims 31 and 39.

Applicants submit that the grounds for this rejection have been removed by amendment of the claims. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Rejection under 35 U.S.C. 102

In par. 6 of the Office Action, the Examiner rejected claims 31, 35, and 38 under 35 U.S.C. 102(e) as being anticipated by Pace (U.S. patent 4,908,112). The Examiner pointed out that Pace discloses a microfluidics device having a trench and multiple electrodes along the trench which may be sequentially activated to move charged particles within the trench; therefore, Pace disclosed all elements of Applicants' invention.

Applicants respectfully disagree with the rejection, particularly in view of the amendments. The claims now describe an embodiment of Applicants' invention that includes an element not disclosed in Pace; namely, an optical detection device for controlling the speed of electrical field waves. Accordingly, Applicant request that the rejection be withdrawn.

Rejections under 35 U.S.C. 103

In par. 10 of the Office Action, the Examiner rejected claims 36 and 37 under 35 U.S.C. 103(a) as being unpatentable over Pace (cited above). The Examiner argues that Pace discloses high resolution separation of charged particles by application of high electric fields between closely spaced electrodes along a separation path rather than along the entire length of the separation path; therefore, Applicants' invention would be obvious to one of ordinary skill in the art.

Applicants respectfully disagree, particularly in view of the amendments. The claims now describe the aspect of Applicants' invention wherein electric field waves are generated by sequentially generating electrical fields between the electrodes spaced along the separation path. The speed at which the electric field waves traverse a separation path is controlled by an electronic computer in interaction with an optical detection device that monitors the charged particles being separated at one or more locations along the separation path. Applicants submit that such feedback control of electrodes is neither disclosed nor suggested by Pace. At most, Pace teaches the sequential activation of closely spaced electrodes and optical detection of separated particles. However, these features are employed in isolation. There is no suggestion that optical monitoring of the progress of separation could be used to control the electric fields responsible for the separation in order to increase resolution. Applicants submit that their invention would not have been obvious to one of ordinary skill starting from the disclosure of Pace. Accordingly, Applicants respectfully request that the rejection be withdrawn.

In par. 11 of the Office Action, the Examiner rejected claims 39 and 43-46 under 35 U.S.C. 103(a) as being unpatentable over Pace (cited above) in view of Ramsey (U.S. patent 6,001,229). Roughly, the Examiner argues that Pace discloses all the features of Applicants' invention, except for a plurality of branch trenches. Filling in this feature to give Applicants' invention would have been obvious to one of ordinary skill with access to Ramsey.

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Applicants respectfully submit that the grounds for this rejection have been removed by the above amendments. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Information Disclosure Statement

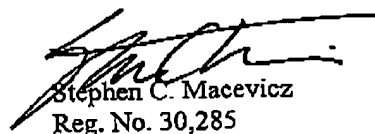
In par. 12 of the Office Action, the Examiner requested a copy of the reference cited as "Thormann et al. (1981) Analytical Isotachopheresis 33-39" in the Information Disclosure Statement dated December 10, 2001, which was not found in the application.

Unfortunately, Attorney for the Applicants has not been able to locate this reference. Attorney for Applicants will attempt to locate and obtain a copy of the reference for submission.

In view of the above, Applicants submit that the claims as written fully satisfy the requirements of Title 35 of the U.S. Code, and respectfully request that the rejections thereunder be withdrawn and the claims be allowed.

If any additional time extensions are required, such time extensions are hereby requested. If any additional fees not submitted with this response are required, please take such fees from deposit account 50-2266.

Respectfully submitted,


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Attached:

Petition for one (1) month time extension for response.